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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
STEVENS, ROBERT	
ART UNIT	PAPER NUMBER
2162	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	09/982,269	MORY ET AL.	
	Examiner	Art Unit	
	Robert Stevens	2162	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 November 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The Office maintains the previous rejections of the claims under 35 USC §103(a), in light of the amendment. However, the Office sets forth new rejections of the claims under 35 USC §103(a), in light of the amendment. The Office further sets forth new rejections of the claims under 35 USC §§101 and 112-1st paragraph, in light of the amendment.

Response to Arguments

2. Applicant's arguments with respect to claims 1-10 have been considered but are moot in view of the new ground(s) of rejection, which address the amended language concerning binary encoding.

For at least these reasons, the Office asserts the rejections of the claims as set forth below.

Continued Examination Under 37 CFR 1.114

3. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/16/2006 has been entered.

Claim Objections

4. **Claims 1-2 and 9 are objected to** because of the following informalities:

Claim 1 contains a misspelled word. See "**form**" in line 8 of the claim.

Claim 2 contains a misspelled word. See "ran**d**" in line 5 of the claim.

Claim 9 contains punctuation that makes it unclear where the preamble stops and the claim body starts. For example, no colon (":") appears in the claim, which is typically used to indicate the end of a preamble-to-body transition. Additionally, no semicolons (";"),which typically separate limitations within the body of the claim, appear in the claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. **Claims 1-10 are rejected under 35 U.S.C. 101** because the claimed invention is directed to non-statutory subject matter.

To be statutory, a claimed computer-related process must either: (A) result in a physical transformation outside the computer for which a practical application is either disclosed in the specification or would have been known to a skilled artisan, or (B) be limited to a practical application with useful, concrete and tangible result.

A practical application can be either physical transformation or a useful, concrete and tangible result.

Regarding independent claims 1 and 5: These claims are each directed to a method for encoding a descriptive element. As such, each method claims a mathematical operation, and does not reflect useful result. One way to correct this is to use the encoded result in an application that employs the encoding to produce a useful result.

Regarding independent claim 3: This claim is directed to a method for decoding an encoded descriptive element. As such, the method claims a mathematical operation, and does not reflect useful result. One way to correct this is to use the encoded result in an application that employs the decoding to produce a useful result.

Regarding independent claim 9: It appears that this claim is incorporating a signal as a type of computer readable medium. The punctuation of the claim makes it unclear. The Office is interpreting the claim to read that the claimed data transmission system includes a "signal comprising ... an encoder and a decoder". Such an interpretation is deemed reasonable, as evidenced by the recitation beginning on line 10 of the claim and indicating that the "signal includes ... an encoded description element ...". It is unclear how a signal may "include" an encoded description element. Signals are phenomena that may be modulated such that a signal sample point may represent certain information at a discrete point in time. Thus the claim is attempting to impart a storage capability into a signal component. Additionally, line 14 recites

that the identification information is "usable", indicating that the claim is directed to a non-operable state.

Regarding independent claim 10: The Office notes that the terminology "computer usable medium" was not defined in the specification. The Office therefore interprets this language as encompassing a transmission medium (e.g., a signal or carrier wave). This claim is not patent eligible because it lacks the necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 USC 101. It is clearly not a series of steps or acts to be a process nor is it a combination of chemical compounds to be a composition of matter. As such, this claim fails to fall within a statutory category. It is, at best, functional descriptive material *per se*.

Claims 1, 3, 5, 6, 9 and 10 and other claims that depend on them, are not patent eligible because the invention recited therein does not produce a useful, concrete and tangible result.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. **Claims 1-2, 5, 7 and 9 are rejected under 35 U.S.C. 112, first paragraph**, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding independent claim 1: The amended language indicates that at least two control bits are required. However, the description at page 18 line 25 through page 19 line 1, seems to indicate that both the key value and each index value require sets of control bits. See especially, page 19 lines 33-34 stating: "All keys and indexes are integer values coded using a variable number of bytes." (This is also reflected in the discussion starting at paragraph [0165] of PG Pub 2002/0138517). Thus it appears that at least four control bits are required (two for a key and two for at least one index), and that only one set of control bits would not produce a working result of Applicant's subject matter, as described in the specification.

Independent claims 5 and 9 include similar amended claim language, and are therefore likewise rejected.

Claims 2 and 7 depend upon claims 1 and 5, respectively, and are therefore likewise rejected.

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. **Claim 3 and 9 are rejected under 35 U.S.C. 112, second paragraph**, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding independent claim 3: There appears to be missing essential steps/elements in this claim. The preamble is directed to decoding a "binary" fragment, yet the body of the claim contains no recitation directed to a "binary" element (or the generation of such an element). Additionally, the preamble is directed to "decoding", yet there is no recited decoding step in the body of the claim. Thus, scope of the claim is unclear.

Regarding independent claim 9: It appears that this claim is incorporating a signal as a type of computer readable medium. The punctuation of the claim makes it unclear. The Office is interpreting the claim to read that the claimed data transmission system includes a "signal comprising ... an encoder and a decoder". Such an interpretation is deemed reasonable, as evidenced by the recitation beginning on line 10 of the claim and indicating that the "signal includes ... an encoded description element ...". It is unclear how a signal may "include" an encoded description element. Signals are phenomena that may be modulated such that a signal sample point may represent certain information at a discrete point in time. Thus the claim appears to be attempting to impart a storage capability into a signal "component" that merely provides a data transfer conduit to a decoder element. Additionally, the claim does not set forth

a structure that positively recites the structure of the system (i.e., no recitation indicating that the signal element connects the encoder and decoder via modem components, for example). As such, there appears to be missing steps/essential elements. Additionally, line 14 recites that the identification information is "usable", indicating that the claim is directed to a non-operable state. Additionally, there is a lack of antecedent basis for the phrase "said binary fragment" of lines 14-25. It is noted that line 10 recites "at least one binary fragment", and thus it is unclear which binary fragment (in the case of 2 or more) is being referenced by lines 14-15. Thus, scope of the claim is unclear.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. **Claims 1-10 are rejected under 35 U.S.C. 103(a)** as being unpatentable over Buford et al (International Application No. PCT/US97/04574, filed Mar. 17, 1997 and published as International Publication No. WO 97/34240 on Sep. 18, 1997, hereafter referred to as "Buford") in view of Martin, Bruce, et al., editors, ("WAP Binary XML Content Format", W3C NOTE 24, June 1999, pp. 1-22, (downloaded from: www.w3.org/TR/wbxml/), hereafter referred to as "Bruce"). Note that Simon North et al. (Sam's Teach Yourself XML in 21 Days, Sam's Publishing, Indianapolis, IN, Mar. 1999, p. 105, hereafter referred to as "North") has been used to provide evidence that schemas and DTDs were obvious variants to one skilled in the art at the time of Applicant's subject matter.

Regarding independent claim 1, Buford discloses: ***An encoding method for encoding a description element of an instance of a markup language schema defining a hierarchical structure of description elements, said hierarchical structure comprising hierarchical levels, parent description elements and child description elements, said description element to be encoded comprising a content*** (See Buford page 9 lines 17-20 and page 11 lines 19-24, teaching the encoding of description elements modeled as a tree hierarchy), ***characterized in that it consists in: providing a table derived form said schema , said table containing identification information for solely identifying each description element in a hierarchical level, and structural information for retrieving any child description element from its parent description element,*** (See Buford page 9 lines 19-24 n the context of page 11 line 19 – page 12 line 4, teaching the use of tables containing description element information organized in a hierarchical, i.e., parent-child, relationship.) ***scanning a hierarchical memory representation of said instance***

from parent description elements to child description elements until reaching the description element to be encoded, and retrieving the identification information of each scanned description element, (See Buford Abstract and p. 9 lines 20-24, discussing parsing of a tree data model.***) encoding said description element to be encoded as a fragment comprising said content and a sequence of the retrieved identification information*** (See Buford Abstract and page 9 lines 17-26, discussing the storage of parse tree data in compressed and indexable form.)

However, Buford does not explicitly teach the remaining limitations as claimed. Bruce, though, discloses **wherein said binary fragment includes at least two control bits**. (See Bruce Table 3 of page 10, showing the use of bits 6 and 7 indicating the meaning of the data following.)

It would have been obvious to one of ordinary skill in the art at the time of the invention to apply the teachings of North for the benefit of Buford in view of Bruce, because to do so would have allowed a system designer to reduce the transmission size of XML documents allowing more effective use of narrowband communication channels, as taught by Bruce in the section entitled "Abstract" on p. 2. These references were all applicable to the same field of endeavor, i.e., XML document processing.

It is further noted that Buford makes use of DTDs to model data. It was well known at the time of the Applicant's subject matter that DTDs were an obvious variant of schemas, as evidenced in North at the page 105 section entitled "Developing the DTD", which states: "There

are many ways to describe information models, technically known as schemas. ... One such schema is the XML DTD ...".

It would have been obvious to one of ordinary skill in the art at the time of the invention to apply the teachings of North for the benefit of Buford in view of Bruce, because to do so would have allowed a programmer to model information, as taught by North in the section entitled "Developing the DTD" on p. 105. These references were all applicable to the same field of endeavor, i.e., XML document processing.

Regarding claim 2, Buford discloses: ***characterized in that when a description element is defined ... as possibly having multiple occurrences, said table further comprises for said description element an occurrence information for indicating that said description element may have multiple occurrences in an instance, and when an occurrence having a given rank is scanned during the encoding, the corresponding retrieved identification information is indexed with said rank.*** (See Buford Fig. 4 and page 20 lines 15-28, discussing the use of table entries and the index and proper position of objects within a table.)

Claim 5 is substantially similar to claim 1, and therefore likewise rejected.

Claim 7 is directed to a computer system for implementing the system of claim 5. As such, this claim is substantially similar to claim 5, and therefore likewise rejected.

Regarding independent claim 9, Buford discloses: ***A data transmission system, the data transmission system includes a signal for transmission over a transmission network comprising an encoder and a decoder having a memory storing at least one table derived from a markup language*** **(Abstract, Fig. 1, p. 4 lines 1-21)** ***schema , said markup language schema defining a hierarchical structure of description elements*** **(Abstract in context p. 9 lines 20-21),** ***said hierarchical structure comprising hierarchical levels, parent description elements and child description elements*** **(Abstract in context of p. 9 lines 19-24 and p. 11 line 19 – p. 12 line 4),** ***said table containing identification information for solely identifying each description element in a hierarchical level*** **(Abstract in context of p. 9 lines 19-24 and p. 11 line 19 – p. 12 line 4),** ***and structural information for retrieving any child description element from its parent description element,*** (See Buford Abstract, Figure 1 and page 9 lines 19-24 in the context of page 11 line 19 – page 12 line 4, teaching the use of tables containing description element information organized in a hierarchical, i.e., parent-child, relationship.) ***wherein said signal includes at least one fragment representing a content of an encoded description element*** (Abstract and p. 9 lines 17-21), ***and a sequence of identification information being associated in said table to said encoded description element and at least one parent description element*** (Abstract in context of p. 9 lines 19-24 and p. 11 line 19 – p. 12 line 16), ***wherein the sequence of identification information is usable by the decoder as a key to decode the encoded description element.*** (See Buford Abstract and page 9 lines 17-26 and page 11 line 19 – page 12 line 16, discussing the storage of parse tree data in compressed and indexable form and reconstructing the document.)

However, Buford does not explicitly teach the remaining limitations as claimed. Bruce, though, discloses **wherein said binary fragment includes at least two control bits**. (See Bruce Table 3 of page 10, showing the use of bits 6 and 7 indicating the meaning of the data following.)

It would have been obvious to one of ordinary skill in the art at the time of the invention to apply the teachings of North for the benefit of Buford in view of Bruce, because to do so would have allowed a system designer to reduce the transmission size of XML documents allowing more effective use of narrowband communication channels, as taught by Bruce in the section entitled "Abstract" on p. 2. These references were all applicable to the same field of endeavor, i.e., XML document processing.

It is further noted that Buford makes use of DTDs to model data. It was well known at the time of the Applicant's subject matter that DTDs were an obvious variant of schemas, as evidenced in North at the page 105 section entitled "Developing the DTD", which states: "There are many ways to describe information models, technically known as schemas. ... One such schema is the XML DTD ...".

It would have been obvious to one of ordinary skill in the art at the time of the invention to apply the teachings of North for the benefit of Buford in view of Bruce, because to do so would have allowed a programmer to model information, as taught by North in the section entitled "Developing the DTD" on p. 105. These references were all applicable to the same field of endeavor, i.e., XML document processing.

13. **Claims 3-4, 6, 8 and 10 are rejected under 35 U.S.C. 103(a)** as being unpatentable over Buford et al (International Application No. PCT/US97/04574, filed Mar. 17, 1997 and published as International Publication No. WO 97/34240 on Sep. 18, 1997, hereafter referred to as "Buford") in view of Simon North et al. (Sam's Teach Yourself XML in 21 Days, Sam's Publishing, Indianapolis, IN, Mar. 1999, p. 105, hereafter referred to as "North").

Regarding independent claim 3, Buford discloses: ***A decoding method for decoding a binary fragment comprising a content and a sequence of identification information*** (See Buford Abstract, discussing storage and transmission of a compact representation of objects, in the context of page 16 lines 15-20 and page 13 lines 3-7, discussing representation in the smallest number of bits possible.), ***characterized in that it consists in: using at least one table derived from a markup language schema, said schema defining a hierarchical structure of description elements comprising hierarchical levels, parent description elements and child description elements, said table containing identification information for solely identifying each description element in a hierarchical level, and structural information for retrieving any child description element from its parent description element,*** (See Buford Abstract in context of p. 9 lines 19-24 and p. 11 line 19 – p. 12 line 4, discussing representation of data in a hierarchical structure comprised of parent-child nodes and use of an indexing scheme.) ***scanning said sequence identification information by identification information,*** (See Buford page 20 lines 15-22, discussing index-based processing.) ***at each step searching in said table for the description element associated to the current identification information and adding said description element to a hierarchical memory representation of an instance of said schema if***

not already contained in said hierarchical memory representation, (See Buford p. 18 line 22 – p. 19 line 7, discussing the reconstruction of a document instance from DTD table entries.) ***adding said content to the description element of said hierarchical memory representation that is associated to the last identification information of said sequence.*** (See Buford Abstract and p. 19 lines 3-7, discussing the reconstruction of a document instance from DTD table entries.)

Although Buford does not explicitly disclose the use of a schema, it is noted that Buford makes use of DTDs to model data. It was well known at the time of the Applicant's subject matter that DTDs were an obvious variant of schemas, as evidenced in North at the page 105 section entitled "Developing the DTD", which states: "There are many ways to describe information models, technically known as schemas. ... One such schema is the XML DTD ...".

It would have been obvious to one of ordinary skill in the art at the time of the invention to apply the teachings of North for the benefit of Buford, because to do so would have allowed a programmer to model information, as taught by North in the section entitled "Developing the DTD" on p. 105. These references were all applicable to the same field of endeavor, i.e., XML document processing.

Regarding claim 4, Buford discloses: ***characterized in that when a description element is defined in the schema as possibly having multiple occurrences, said table further comprises for said description element an occurrence information for indicating that said description element may have multiple occurrences in an instance, and when said sequence comprises an***

indexed identification information, said index is interpreted as an occurrence rank for the associated description element, same description element(s) of lower rank(s) being added to said hierarchical memory representation if not already contained in it. (See Buford page 20 lines 15-28, discussing the use of table entries and the index and proper position of objects within a table.)

Claim 6 is substantially similar to claim 3, and therefore likewise rejected.

Claim 8 is directed to a computer system for implementing the system of claim 6. As such, this claim is substantially similar to claim 6, and therefore likewise rejected.

Regarding independent claim 10, Buford discloses: ***A computer program product comprising a computer useable medium having computer readable program code embodied therein for reporting on performance of a plurality of parameters*** (See Buford Abstract, in the context of page 16 lines 15-20 and page 13 lines 3-7, teaching storage and transmission and reconstruction of a compact representation of objects***), the program product comprising: program code configured to implement a decoder having a table for updating a hierarchical memory representation of an instance of a markup language schema (Abstract in context of p. 9 lines 20-21) , said markup language schema defining a hierarchical structure of description elements (Abstract in context of p. 9 lines 20-21), said hierarchical structure comprising hierarchical levels, parent description elements and child description elements (Abstract in context of p. 9 lines 19-24 and p. 11 line 19 – p. 12 line 4), characterized in that the table is***

derived from said markup language schema (p. 11 line 19 – p. 12 line 4), and the table contains identification information for solely identifying each description element in a hierarchical level (Abstract in context of p. 9 lines 19-24 and p. 11 line 19 – p. 12 line 4), and structural information for retrieving any child description element from its parent description element. (See Buford Abstract in context of p. 9 lines 19-24 and p. 11 line 19 – p. 12 line 4, discussing representation of data in a hierarchical structure comprised of parent-child nodes and use of an indexing scheme, page 20 lines 15-22, discussing index-based processing, and page 18 line 22 – page 19 line 7, discussing the reconstruction of a document instance from DTD table entries.)

Although Buford does not explicitly disclose the use of a schema, it is noted that Buford makes use of DTDs to model data. It was well known at the time of the Applicant's subject matter that DTDs were an obvious variant of schemas, as evidenced in North at the page 105 section entitled "Developing the DTD", which states: "There are many ways to describe information models, technically known as schemas. ... One such schema is the XML DTD ...".

It would have been obvious to one of ordinary skill in the art at the time of the invention to apply the teachings of North for the benefit of Buford, because to do so would have allowed a programmer to model information, as taught by North in the section entitled "Developing the DTD" on p. 105. These references were all applicable to the same field of endeavor, i.e., XML document processing.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Non-Patent Literature

Avaro, Olivier, et al., "MPEG-4 Systems: Overview", Signal Processing: Image Communication, Volume 15, Issues 4-5, Jan. 2000, pp. 281-298.

US Patents

Merrick et al	7,028,312
Girardot et al	6,883,137
Li et al	6,772,180

PCT Publications

Paek et al	WO00/28725

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Stevens whose telephone number is (571) 272-4102. The examiner can normally be reached on M-F 6:00 - 2:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Breene can be reached on (571) 272-4107. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Robert Stevens
Examiner
Art Unit 2162

January 9, 2007

SHAHID ALAM
PRIMARY EXAMINER